

## LINCOLN CITY/LANCASTER COUNTY PLANNING STAFF REPORT

**for September 29, 2004 PLANNING COMMISSION MEETING**

**P.A.S.:** North Branched Oak Estates Community Unit Plan  
Co. Special Permit #04047, Preliminary Plat #04021

**Note:** This is a combined staff report for related items. This report contains a single background and analysis section for all items. However, there are separate conditions provided for each individual application.

**PROPOSAL:** A community unit plan and preliminary plat for nine acreage residential units.

**LOCATION:** Southwest of the intersection of NW 84<sup>th</sup> and W. Rock Creek Road.

### **WAIVER REQUESTS:**

1. Ornamental street lighting.
2. Sidewalks.
3. Street trees.
4. Landscape screens.
5. Stormwater Detention.
6. Block length.

**LAND AREA:** 150.90 acres, more or less.

**CONCLUSION:** This is an AG Community Unit Plan, proposing to “cluster” the allowed dwelling units to nine acreage lots. Waivers requested are typical of a rural subdivision and are provided for in the code. A 20% bonus is being requested.

### **RECOMMENDATION:**

Co. Special Permit #04047  
Preliminary Plat # 04021

Conditional Approval  
Conditional Approval

#### Waivers

- |                         |          |
|-------------------------|----------|
| 1. Ornamental lighting  | Approval |
| 2. Sidewalks            | Approval |
| 3. Street trees         | Approval |
| 4. Landscape screens    | Approval |
| 5. Stormwater Detention | Approval |
| 6. Block length         | Approval |

## **GENERAL INFORMATION**

**LEGAL DESCRIPTION:** Lot 31 and a portion of Lot 29 Irregular Tracts, in the North ½ of Section 22, T12N, R6E of the 6<sup>th</sup> P.M., Lancaster County, Nebraska.

**EXISTING ZONING:** AG Agriculture

**EXISTING LAND USE:** Farm land/pasture

**SURROUNDING LAND USE AND ZONING:** Agricultural land in AG zoning on all sides. Acreages along the county road to the west and south. One farm house is on the east side of this parcel. Branched Oak Lake is ½ mile southwest of this application.

**HISTORY:** Changed from AA Ruraland Public Use to AG Agriculture with the adoption of the 1979 Zoning Update.

**COMPREHENSIVE PLAN SPECIFICATIONS:** The 2025 Comprehensive Plan shows this area as Agriculture. This is outside the Lincoln growth tiers. A cluster is permitted by special permit in the AG district. In relation to clustering the Comprehensive Plan states:

Currently, acreage development has occurred under two development scenarios: AG - Agricultural District (minimum of 20 acres per lot) and AGR - Agricultural Residential District (minimum of 3 acres per lot) with the possibility in both AG and AGR zoning districts of clustering units together in order to preserve more open space and agricultural areas and/or receive additional density bonuses under a community unit development. The complex issue of acreage development and other public objectives requires a large array of land use strategies (pg F 70)

Acknowledge the "Right to Farm" and preserve areas for agricultural productions throughout the county by designating specific areas in advance for rural residential so as to limit areas of potential conflict between farms and acreages (pg F 70)

Retain the current overall density of 32 dwellings per square mile (20 acre) for all agriculturally zoned land. Provide for an ability to divide two 3 acre lots per "40" acre parcel with conditions and administrative review and right of appeal. This would allow more flexibility for parcel size while retaining the overall density and assist in retaining farmable units of land. (F 70)

In determining areas of higher density rural acreage (200 units or more per square mile), numerous factors will be reviewed, such as but not limited to water and rural water districts, soil conditions, roads, agricultural productivity, land parcelization, amount of existing acreages, and plans for urban or town development. Acreages should develop in areas that best reflect the carrying capacity of that area for acreages. A performance criteria should be developed to review requests for acreage zoning and to determine where these standards can best be met. (F 70)

Development of a performance standard "point system" will allow the location of higher density rural acreage development in either "AG" or "AGR" where the review criteria can be met. This allows equal treatment across the county, maximum freedom of determination of marketing and sale, while locating those developments only in those areas where sufficient "points" can be accumulated to justify the development at the requested location." (F 71)

**UTILITIES:** This is not in a rural water district. Individual waste water treatment and well water is proposed. The groundwater report shows adequate quantity and quality.

**TOPOGRAPHY:** The property is rolling, draining to the south.

**TRAFFIC ANALYSIS:** W. Rock Creek Road and NW 84 are gravel county roads.

**PUBLIC SERVICE:** This area is served by Raymond Rural Fire District. This is in the Raymond Central School District # 161. This is in the Norris Public Power service area.

**REGIONAL ISSUES:** Expansion of the acreage areas. Clustering to preserve farm land.

**ENVIRONMENTAL CONCERNS:** The Historic and Ecological Resources survey shows no resources on this property. The mid 1850's Morman Road crossed just north of NW 84<sup>th</sup> and Rock Creek Road. Branched Oak Lake is located one half mile southwest of this application. The soil rating is 4.9, on a scale of 1 to 10 where 1-4 are prime ag land. This is not prime land.

**AESTHETIC CONSIDERATIONS:** na

**ALTERNATIVE USES:** All uses allowed in the AG district. Seven 20+ acre lots.

**ANALYSIS:**

1. This request is for a Special Permit for a Community Unit Plan for 9 acreage residential lots. A crushed rock private street is proposed and individual sewer and water is proposed. A 20% dwelling unit bonus is being requested for preservation of the farm land.
2. Typical cluster acreage lots are in the three acre size range. Additional farm land could be preserved by proposing three acre lots rather than the 4.5 to 6.9 acre lots proposed. Another purpose of the "cluster" CUP technique is to reduce the number of access points to public streets. This layout proposes to string lots along NW 84<sup>th</sup> Street and have three accesses off that road. All access to the internal road is the preferred approach unless otherwise dictated by site conditions.

3. This request is in general conformance with the Comprehensive Plan.
4. The Planning Department issued a draft Performance Standard and Acreage Development Strategy on September 17<sup>th</sup> 2003. Under that proposal, a raw score of 300 could lead to support for a requested change of zone to AGR. Other bonuses could be available based on the score. The raw score for this parcel is, - 137.
5. The density calculations for the project are as follows;
 

|   |   |                       |
|---|---|-----------------------|
| 150.90 acres at 1 dwelling per 20 acres | = | 7.545 dwellings       |
| 20% bonus requested X 1.20              | = | 9.054 dwellings       |
|   |   | 9 dwellings permitted |
| Requested                               |   | 9 units on 9 lots     |
6. There were no conflicting farm uses, such as feedlots, noted in the immediate area.
7. This reflects the normal adjustments to accomplish a cluster style of subdivision through the CUP, however, the lot size is larger than typical and the lot arraignment is less than desirable, stripping the county road with five of the nine lots.
8. Waivers are requested for street lights, sidewalks, block length, street trees, storm drainage and screening. These are typical waivers required, provided for and appropriate for agriculture/acreage clusters. Yards are adjusted from AG to AGR standards as part of the cluster.
9. The County Engineer's memo of August 26 notes several minor issues and corrections.
10. The Lincoln/Lancaster County Health Department notes the waste water treatment is adequately addressed. They note groundwater in the area ranges from 15 to 3 gallons per minute. Five is considered to be a minimum yield for domestic use. Test wells should be conducted on each lot.
11. Water quantity is speculative and quality is poor.

#### CONDITIONS FOR SPECIAL PERMIT #04047:

##### Site Specific:

1. After the applicant completes the following instructions and submits the documents and plans to the Planning Department office and the plans are found to be acceptable, the

application will be scheduled on the County Board's agenda: (NOTE: These documents and plans are required by resolution/ordinance or design standards.)

1.1 Make the corrections requested by the County Engineer in his letter of August 26, 2004.

1) General Note No. 11 shall include relinquishment of access to NW 84<sup>th</sup> except for one access to Lots 7,8 and 9.

2) Existing farm access locations for Lots 8 and 9 will have access permits applied for residential use. Lot 7 will also require an access permit and shall be a minimum of 300 feet south of West Rock Creek Road.

3) Easements shall be shown for culvert pipe in the event NW 86<sup>th</sup> Street becomes a public street in the future.

4) The HY-8 culvert analysis has a headwater elevation for the 50 year flow over the top of road elevation but shows no overtopping. Also the tailwater depth is shown a 0.00 which is incorrect.

5) The typical cross section of improvement shall be shown.

6) Grading shall extend around the temporary turnaround.

1.2 Revise the drawing to show smaller lots that optimize the interior road for access and reduce the number of individual access points to the county road.

1.3 Provide test wells on all proposed lots to show adequate quantity and quality of water is available.

2. This approval permits 9 single family lots.

General:

3. Before receiving building permits:

3.1 The permittee is to submit a revised site plan and the plan is found to be acceptable.

3.2 The permittee is to submit six prints and a permanent reproducible final site plan as approved by the County Board.

- 3.3 The construction plans are to comply with the approved plans.
- 3.4 The final plat(s) is/are approved by the County Board.
- 3.5 The County Board approves associated requests:
  - 3.5.1 North Branched Oak Estates Preliminary Plat #04021.
  - 3.5.2 A waiver to the sidewalk, street lights, landscape screen, stormwater detention and street tree requirements since the area is of larger lots, a rural nature and the subdivision will not be annexed.
  - 3.5.3 A modification to lot area, frontage and setbacks as part of the CUP.
  - 3.5.4 A modification to the requirements of the land subdivision resolution to permit a block length in excess of 1320' along the north, south, east and west perimeter of this subdivision.
- 3.6 The County Engineer has approved:
  - 3.6.1 An agreement for street maintenance.

STANDARD CONDITIONS:

- 4. The following conditions are applicable to all requests:
  - 4.1 Before occupying this Community Unit Plan all development and construction is to comply with the approved plans.
  - 4.2 Before occupying this Community Unit Plan, City/County Health Department is to approve the water and waste water systems.
  - 4.3 All privately-owned improvements are to be permanently maintained by the owner or an appropriately established homeowners association approved by the County Attorney.
  - 4.4 The site plan accompanying this permit shall be the basis for all interpretations of setbacks, yards, locations of buildings, location of parking and circulation elements, and similar matters.
  - 4.5 This resolution's terms, conditions, and requirements bind and obligate the permittee, its successors and assigns.

- 4.6 The County Clerk is to file a copy of the resolution approving the permit and the letter of acceptance with the Register of Deeds. The Permittee is to pay the recording fee.

CONDITIONS FOR PRELIMINARY PLAT #04021:

Site Specific:

1. After the subdivider completes the following instructions and submits the documents and plans to the Planning Department office, the preliminary plat will be scheduled on the City Council/County Board agenda: (NOTE: These documents and plans are required by ordinance or design standards.)
  - 1.1 Make the corrections requested by the County Engineer in his letter of August 26, 2004.
    - 1) General Note No. 11 shall include relinquishment of access to NW 84<sup>th</sup> except for one access to Lots 7,8 and 9.
    - 2) Existing farm access locations for Lots 8 and 9 will have access permits applied for residential use. Lot 7 will also require an access permit and shall be a minimum of 300 feet south of West Rock Creek Road.
    - 3) Easements shall be shown for culvert pipe in the event NW 86<sup>th</sup> Street becomes a public street in the future.
    - 4) The HY-8 culvert analysis has a headwater elevation for the 50 year flow over the top of road elevation but shows no overtopping. Also the tailwater depth is shown a 0.00 which is incorrect.
    - 5) The typical cross section of improvement shall be shown.
    - 6) Grading shall extend around the temporary turnaround.
  - 1.2 Revise the drawing to show smaller lots that optimize the interior road for access and reduce the number of individual access points to the county road.
  - 1.3 Provide test wells on all proposed lots to show adequate quantity and quality of water is available.
2. The County Board approves associated requests:

- 2.1 County Special Permit # 04047 for the Community Unit Plan.
- 2.2 A waiver to the storm water detention, sidewalk, street paving, street lights, landscape screen, and street tree requirements since the area is of larger lots, a rural nature and the subdivision will not be annexed.
- 2.3 A waiver to the lot area, setbacks and frontage.
- 2.4 A modification to the requirements of the land subdivision ordinance to permit a block length in excess of 1320' along the north, south, east and west perimeter of this subdivision.

General:

- 3. Final Plats will be scheduled on the Planning Commission agenda after:
  - 3.1 Streets, water facilities if rural water, drainage facilities, temporary turnarounds and barricades, and street name signs have been completed.
  - 3.2 The subdivider has signed an agreement that binds the subdivider, its successors and assigns:
    - 3.2.1 To submit to the County Engineer an erosion control plan.
    - 3.2.2 To protect the remaining trees on the site during construction and development.
    - 3.2.3 To submit to lot buyers and home builders a copy of the soil analysis
    - 3.2.4 To complete the private improvements shown on the preliminary plat.
    - 3.2.5 To maintain the outlots and private improvements on a permanent and continuous basis. However, the subdivider may be relieved and discharged of this maintenance obligation upon creating in writing a permanent and continuous association of property owners who would be responsible for said permanent and continuous maintenance. The subdivider shall not be relieved of such maintenance obligation until the document or documents creating said property owners association have been reviewed and approved by the County Attorney and filed of record with the Register of Deeds.



- 3.2.6 To relinquish the right of direct vehicular access to W. Rock Creek Road except for NW 86th Street and one farm access. To relinquish the right of direct vehicular access to NW 84<sup>th</sup> except for two farm access.
- 3.2.7 To comply with the provisions of the Land Subdivision Resolution regarding land preparation.

Prepared by:

\_\_\_\_\_  
Mike DeKalb, 441-6370, [mdekalb@lincoln.ne.gov](mailto:mdekalb@lincoln.ne.gov)  
Planner  
September 15, 2004

**APPLICANT:** Brian D. Carstens  
Carstens and Associates  
601 Old Cheney Road, Suite C  
Lincoln, NE 68512  
434 - 2424

**OWNER:** Robert L. and Michelle S. Benes, husband and wife  
3300 Manassas Place  
Lincoln, NE 68516  
423 - 6811

**CONTACT:** Brian D. Carstens  
Carstens and Associates  
601 Old Cheney Road, Suite C  
Lincoln, NE 68512  
434 - 2424



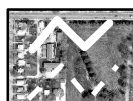
**Preliminary Plat #04021**  
**Special Permit #04047**  
**North Branched Oak Estates**  
**NW 84th & West Rock Creek Rd.**

2002 aerial

**Zoning:**

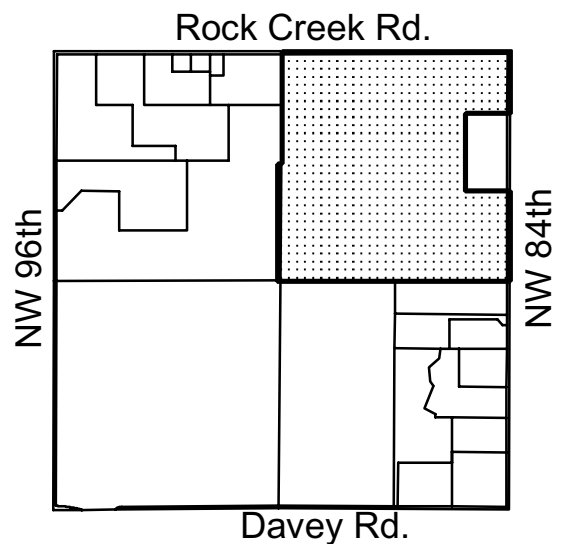
|            |  |
|------------|--|
| R-1 to R-8 | Residential District                   |
| AG         | Agricultural District                  |
| AGR        | Agricultural Residential District      |
| R-C        | Residential Conservation District      |
| O-1        | Office District                        |
| O-2        | Suburban Office District               |
| O-3        | Office Park District                   |
| R-T        | Residential Transition District        |
| B-1        | Local Business District                |
| B-2        | Planned Neighborhood Business District |
| B-3        | Commercial District                    |
| B-4        | Lincoln Center Business District       |
| B-5        | Planned Regional Business District     |
| H-1        | Interstate Commercial District         |
| H-2        | Highway Business District              |
| H-3        | Highway Commercial District            |
| H-4        | General Commercial District            |
| I-1        | Industrial District                    |
| I-2        | Industrial Park District               |
| I-3        | Employment Center District             |
| P          | Public Use District                    |

One Square Mile  
 Sec. 22 T12N R5E



Zoning Jurisdiction Lines

City Limit Jurisdiction



Lincoln City - Lancaster County Planning Dept.



## GENERAL NOTES

1. THIS PRELIMINARY PLAT/ C.U.P. CONTAINS 150.90 ACRES MORE OR LESS.
2. THIS PRELIMINARY PLAT/C.U.P. PERMITS 9 SINGLE FAMILY LOTS AND 2 OUTLOTS. EACH LOT SHALL CONTAIN A MAXIMUM OF ONE SINGLE FAMILY RESIDENCE AND OUT BUILDINGS, ALL LOCATED WITHIN THE BUILDING ENVELOPES AS SHOWN AND/ OR NOTED.
3. THE CURRENT ZONING IS 'AG' & THE PROPOSED ZONING IS 'AG'/C.U.P. WITH 20% DENSITY BONUS FOR FARM LAND PRESERVATION.
4. THE MAXIMUM BUILDING HEIGHT SHALL NOT EXCEED 35 FEET, AS PER 'AG' ZONING.
5. THE DEVELOPER/OR OWNER RESERVES THE RIGHT TO BUILD ANYWHERE WITHIN THE BUILDING ENVELOPES SHOWN.
6. THE DEVELOPER PROPOSES THE USE OF INDIVIDUAL WATER WELLS FOR POTABLE WATER SUPPLY.
7. THE DEVELOPER PROPOSES THE USE OF INDIVIDUAL WASTE WATER SYSTEMS. IF PERCOLATION TEST DO NOT PERMIT SUB SURFACE FIELDS, LAGOONS SHALL BE INSTALLED. WASTE WATER SYSTEMS SHALL BE APPROVED BY THE LANCASTER COUNTY HEALTH DEPARTMENT.
8. THE DEVELOPER SHALL CONSTRUCT AND SURFACE THE PRIVATE ROADWAY WITH 3" OF CRUSHED ROCK AND 1" OF GRAVEL IN ACCORDANCE WITH THE LANCASTER COUNTY STANDARDS. THE COUNTY SHALL BE NOTIFIED PRIOR TO THE LAYING OF THE GRAVEL. SURFACING RADII THE INTERSECTION AT WEST ROCK CREEK ROAD AND N.W. 86 STREET SHALL HAVE A RADIUS OF 50.0 FEET.
9. ONLY ONE SUBDIVISION GROUND SIGN SHALL BE PERMITTED FOR THIS DEVELOPMENT.
10. ALL CURVILINEAR DIMENSIONS ARE CHORD LENGTHS.
11. DIRECT VEHICULAR ACCESS TO WEST ROCK CREEK ROAD IS HEREBY RELINQUISHED EXCEPT FOR AN EXISTING FARM ACCESS AND N.W. 86TH STREET.
12. ALL TOPOGRAPHIC CONTOURS ARE AT NAVD 88 DATUM.
13. EACH LOT SHALL HAVE ONLY ONE RESIDENTIAL ACCESS.
14. THE FOLLOWING WAIVERS ARE APPROVED WITH THIS PRELIMINARY PLAT #\_\_\_\_\_: SIDEWALKS, STREET TREES, STREET LIGHTING, LANDSCAPE SCREENING, CUL-DE-SAC LENGTH AND BLOCK LENGTH.
15. 'JUNK CARS' SHALL BE PROHIBITED IN THIS DEVELOPMENT AS NOTED IN PROTECTIVE COVENANTS.
16. FUTURE LOT OWNERS WILL BE ADVISED THAT THIS IS IN A RURAL FARM AREA AND THAT NORMAL AND CUSTOMARY FARM ACTIVITIES ARE NOT A NUISANCE.
17. FARM ACCESSSES ARE FOR AGRICULTURAL USES ONLY. ANY OTHER USE WILL FORFEIT AND RELINQUISH THAT ACCESS.

**Preliminary Plat #04021  
Special Permit #04047  
North Branched Oak Estates  
NW 84th & West Rock Creek Rd.**

revised

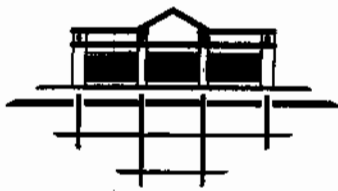
## NORTH BRANCHED OAK ESTATES

### LEGAL DESCRIPTION

LOT 31 IRREGULAR TRACT AND A PORTION OF THE SOUTHEAST CORNER OF LOT 29 IRREGULAR TRACT, ALL LOCATED IN THE NORTH HALF OF SECTION 22, TOWNSHIP 12 NORTH, RANGE 5 EAST OF THE 6TH P.M., LANCASTER COUNTY, NEBRASKA, MORE PARTICULARLY DESCRIBED AS FOLLOWS;

BEGINNING AT THE NORTHEAST CORNER OF SAID SECTION; THENCE ON THE EAST LINE OF SAID SECTION, ON AN ASSIGNED BEARING OF S 0°00'00"W 717.43 FEET; THENCE S 90°00'00"W, A DISTANCE OF 519.01 FEET; THENCE S 0°00'00"W, A DISTANCE OF 897.17 FEET; THENCE N 90°00'00"E, A DISTANCE OF 519.01 FEET TO A POINT ON SAID EAST LINE; THENCE ON SAID EAST LINE S 0°00'00"W, A DISTANCE OF 1032.02 FEET TO THE SOUTHEAST CORNER OF SAID QUARTER; THENCE ON THE SOUTH LINE OF SAID NORTHEAST QUARTER S 89°49'09"W, A DISTANCE OF 2684.40 FEET; THENCE NORTHERLY N 0°14'30"E, A DISTANCE OF 1357.00 FEET; THENCE EASTERLY, N 90°00'00"E, A DISTANCE OF 39.00 FEET; THENCE ON THE WEST LINE OF SAID NORTHEAST QUARTER, N 0°18'17"E, A DISTANCE OF 1290.22 FEET TO THE NORTHWEST CORNER OF SAID NORTHEAST QUARTER; THENCE ON THE NORTH LINE OF SAID NORTHEAST QUARTER N 89°49'41"E, A DISTANCE OF 2632.82 FEET TO THE POINT OF BEGINNING, SAID TRACT CONTAINING AN AREA OF 150.90 ACRES, MORE OR LESS.

**Preliminary Plat #04021  
Special Permit #04047  
North Branched Oak Estates  
NW 84th & West Rock Creek Rd.**



# BRIAN D. CARSTENS AND ASSOCIATES

LAND USE PLANNING RESIDENTIAL & COMMERCIAL DESIGN

601 Old Cheney Road, Suite C Lincoln, NE 68512 Phone: 402.434.2424

August 17, 2004

Mr. Marvin Krout  
Director of Planning  
Lincoln City- Lancaster County Planning Department  
555 South 10th Street  
Lincoln, NE 68508

RE: NORTH BRANCHED OAK ESTATES - PRELIMINARY PLAT & COMMUNITY UNIT PLAN  
N.W. 84<sup>th</sup> Street & West Rock Creek Road

Dear Mr. Krout,

On behalf of Aspen Builders and Robert L. & Michelle S. Benes, we submit the above mentioned applications for your review. North Branched Oak Estates is a proposed AG/C.U.P. with 20% density bonus on approximately 150.90 acres. We are showing 9 single family acreage lots, containing a minimum of 4.5 acres. They will each have private wells and individual septic systems. The private roadway will be constructed to meet Lancaster County design standards.

We have 'clustered' 6 lots close to West Rock Creek Road and 3 lots adjacent to NW 84<sup>th</sup> Street so that the balance of the farm can continue to be farmed. N.W. 86<sup>th</sup> Street has been shown to access 6 of the proposed lots and connecting to West Rock Creek Road.

We are requesting waivers to the Land Subdivision Ordinance to waive sidewalks, street trees, street lighting, landscape screening and block length, as each lot is larger than 1 acre and this project will not be annexed into the City of Lincoln at this time.

Please contact me if you have any further questions.

Sincerely,

Brian D. Carstens

cc: Aspen Builders

Enclosures: 24 Copies of Sheets 1 of 3  
8 Copies of Sheets 2 & 3 of 3  
County Application for a Preliminary Plat  
County Application for a Special Permit  
Application Fee of \$1050.00  
Certificate of Ownership  
2 Copies of Groundwater Report  
3 Copies of the Preliminary Soils Analysis  
2 Copies of Culvert Analysis  
8-1/2" x 11" Reduction



**GROUNDWATER REPORT**

**NORTH BRANCHED OAK ESTATES**

**NE1/4 Sec. 22, T. 12N., R. 5E.**

**NW 84<sup>TH</sup> STREET AND W. ROCK CREEK ROAD**

**LANCASTER COUNTY**

**Petitioner: Brian D. Carstens**

**Brian D. Carstens & Associates**

**Developer: Aspen Builders, Inc.**

**Robert Benes**

**Hydrogeologist and Preparer of Report:**

**Vincent H. Dreeszen**

**July 26, 2004**

## **Report of Groundwater Investigation**

### **North Branched Oak Estates**

#### **NW 84<sup>th</sup> Street and W. Rock Creek Road**

North Branched Oak Estates is a proposed subdivision located at NW 84<sup>th</sup> Street and W. Rock Creek Road, mostly in the NE1/4 Sec. 26-12N-6E. The subdivision is described further as a portion of the northeast quarter Section 22 and a portion of Lot 29 irregular tract in the northwest quarter of Section 22, all located in Township 12 North, Range 5 East of the 6<sup>th</sup> P.M., Lancaster County Nebraska. The development is about one mile north of the dam on Branched Oak Lake (Figures 1 and 2).

The area is in the dissected glaciated region of eastern Nebraska and the proposed development is located on a topographic and groundwater divide between the two branches of Oak Creek. The area is drained by a north to south trending tributary of Oak Creek. Groundwater is discharged also to the south toward Oak Creek.

Logs of three wells completed on the subdivision and of other nearby wells are summarized in Table 1. Wells are located in Figures 1 and 2 and are numbered to correspond to numbers referenced to tables and text.

Wells in the area are constructed in a variety of discontinuous or limited sands in the Pleistocene or the Dakota. A few wells have been constructed in a basal sand above the



bedrock of the Dakota Group sandstones and clays. Lithic sands and gravels composed largely of limestone, sandstone and glacial erratics occur at some locations as in wells 1 and 4. Well yields range from more than 15 gpm in well 4 (Lot 9) to only an estimated yield of 3 to 5 gpm in test well 1 in the NE corner of the section. One well, number 7 to the west was completed in silts at a depth of 81 feet with a yield of only 3 gpm, the well had a drawdown to the bottom of the well. Well number 3 (Lot 3) was logged as having sand and gravel from 30 to 51 feet. However, that interval was not screened and instead the well was completed in sandstone.

Two wells in the subdivision have been completed in Dakota sandstone. As previously mentioned well number 3 (Lot 3) was completed in 21 feet of sandstone with an estimated yield of 12 gpm. Well number 2 (Lot 1) was also completed in sandstone. The sandstone was only three feet thick (90-93 feet) and the yield was reported to be 6 gpm (drawdown to 90 feet). Wells number 5, 6 and 8 to the west and northwest of the proposed subdivision were also completed in sandstone with yields reported between 5 and 10 gpm.

The potential for developing wells on the remaining 6 lots is speculative because of the geologic complexity. Sands or sands and gravels in the Pleistocene appear to occur somewhat randomly if at all as a basal unit overlying the Dakota.

The occurrence of sandstones in the Dakota is also somewhat

unpredictable. The existing wells in the Dakota appear to be developed in the upper Dakota clays and silty sandstones. Sandstones generally appear to be quite thin and lenticular. Regional information indicates additional sandstone underlies the entire area at depths below those in existing wells. For example sandstones were logged from 288 to 295 feet in well number 5 (the well was completed to a depth of 191 feet). The quality of water in the lower Dakota is known to be rather highly mineralized and to increase in mineralization and salinity with depth. Some users of water obtained from the lower part of the Dakota in northern Lancaster County are known to condition water for drinking and household use with reverse osmosis or in some cases with distillation systems.

Water quality in the existing three wells at North Branched Oak Estates is potable and although hard is quite good (Table 2). The water is similar in both the Pleistocene and Dakota. Most users probably would choose to condition the water for household use with water softeners. Water quality can be expected to be similar in other wells drilled to comparative depths.

Water yields in wells number 3 and 4 (Lots 3 and 9) are quite adequate. The yield in well number 2 (Lot 1) is minimal (3 gpm) with a high drawdown. These three wells appear to represent a range of yields that can be expected on the other six lots. Because the available information suggests that significant change in aquifer thicknesses can be expected in short distances,

it is likely that more than one test well will be required on some lots to obtain a satisfactory supply. In the event that a well is attempted in the lower part of the Dakota, water quality testing is recommended to determine the cost of treatment of the water for drinking and household use.

Copies of the logs of the three existing wells at North Branched Oak Estates and copies of the 13 parameter analyses are available.

# NORTH-BRANCHED OAK ESTATES

A PORTION OF THE NORTHEAST QUARTER OF SECTION 22 AND A PORTION OF LOT 29  
IRREGULAR TRACT LOCATED IN THE NORTHWEST QUARTER OF SECTION 22, ALL  
LOCATED IN TOWNSHIP 12 NORTH, RANGE 5 EAST OF THE 6TH P.M., LANCASTER  
COUNTY, NEBRASKA.

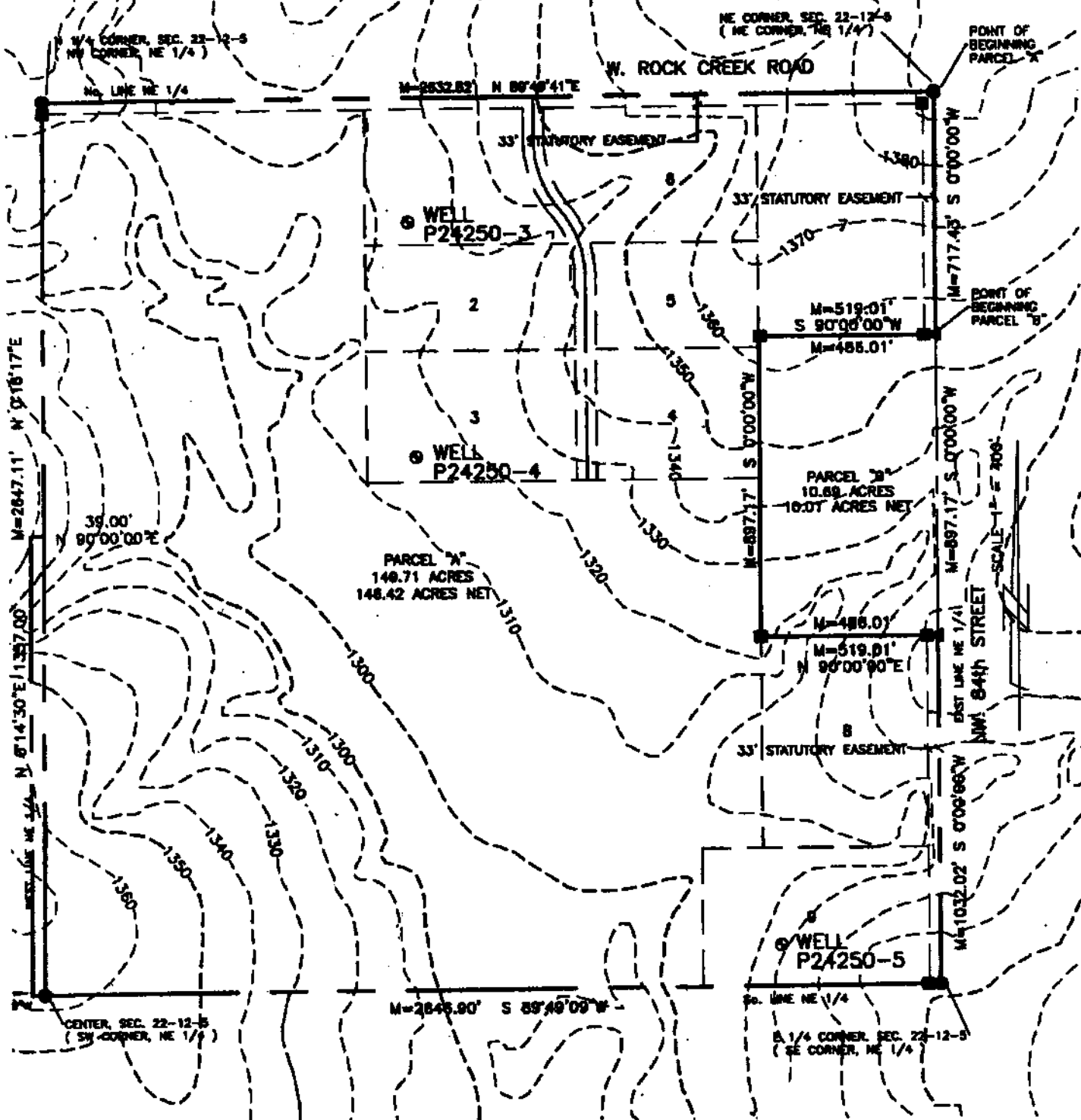
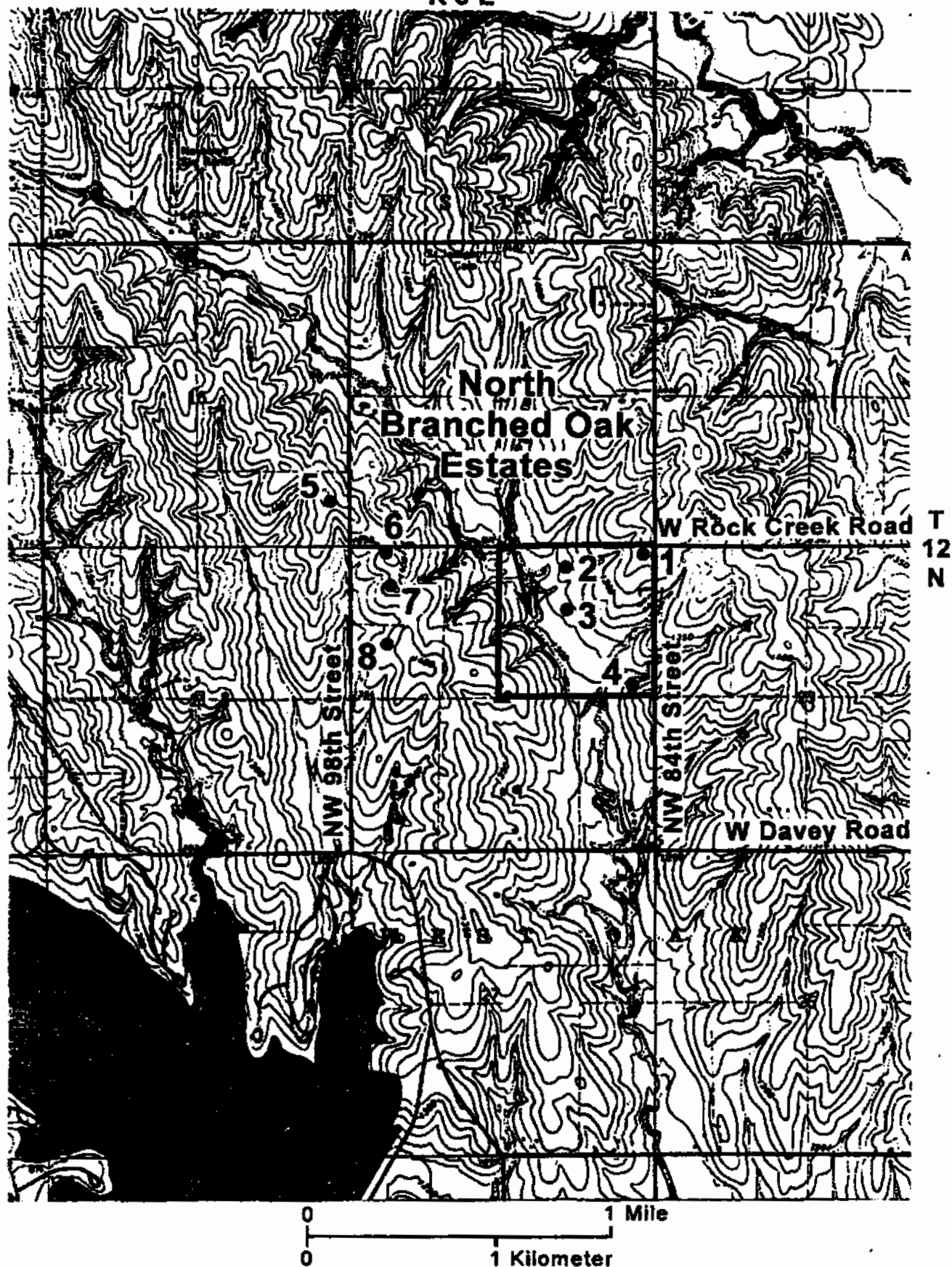


Figure 1.

R 5 E



**Figure 2. Map showing location of wells. Numbers referenced in Tables 1 and 2 summarizing well information and chemical quality analyses.**

| Well Number | Location              | Land Surface Elevation | Well Depth | Static Water Level (elevation) | Saturated Thickness | Sand and Gravel Intervals               | Sandstone Intervals | Aquifer Thickness | Yield (gpm) Reported [R] Estimated [E] | Notes  |
|-------------|-----------------------|------------------------|------------|--------------------------------|---------------------|---|---------------------|-------------------|--|--|
| 1           | NE cor.<br>22-12N-5E  | 1393                   | 150        | 30 (1363)<br>perched           | 85                  | sand and gravel<br>128.5-133 (lithic)   | -                   | 3.5               | 3-6 [E]                                | University of Nebraska test hole,<br>Dakota clays at 133 feet    |
| 2           | NE NW NE<br>22-12N-5E | 1325                   | 95         | 23 (1302)                      | 60                  | 0                                       | 80-93               | 3                 | 5-6 [E]                                | Reg. No. G-113338<br>Lot 1, N. Br. Oak Estates                   |
| 3           | SE NW NE<br>22-12N-5E | 1315                   | 119        | 20 (1295)                      | 98                  | sand and gravel<br>30-51 (not screened) | 97-118              | 21                | 30 [E]<br>12 [R]                       | Reg. No. G-113341<br>Lot 3, N. Br. Oak Estates                   |
| 4           | SE SE NE<br>22-12N-5E | 1320                   | 78         | 23 (1297)                      | 55                  | sand and gravel<br>53-68 (lithic)       | -                   | 18                | 18 [E]<br>12 [R]                       | Reg. No. G-113339<br>Lot 9, N. Br. Oak Estates                   |
| 5           | SE SE<br>16-12N-5E    | 1428                   | 191        | 102 (1328)                     | 89                  | 0                                       | 180-191             | 11                | 10 [R]                                 | Reg. No. G-101042<br>driller logged sand-stone and shale 288-295 |
| 6           | NE NW NW<br>22-12N-5E | 1410                   | 150        | 87 (1323)<br>48 (1362)         | 67                  | 60-70 sand                              | 143-149<br>272-280  | 6                 | 5 [R]                                  | Reg. No. G-98882   |
| 7           | c. NW<br>22-12N-5E    | 1400                   | 81         | perched                        | 33                  | 0                                       | not used            | 0                 | 3 [R]                                  | Reg. No. G-98482   |
| 8           | c. SW NW<br>22-12N-5E | 1390                   | 192        | 122 (1268)                     | 70                  | 0                                       | 185-192             | 7                 | 10 [R]                                 | Reg. No. 100852  |

| Well Number | Total Dissolved Solids | Hardness Total | Alkalinity Total | Sodium Total | Chloride | Sulfate | Calcium | Iron Total | Manganese Total | Fluoride | Nitrate as N | pH   | Total Coliform | E. Coli | Notes                        |
|-------------|------------------------|----------------|------------------|--------------|----------|---------|---------|------------|-----------------|----------|--------------|------|----------------|---------|------------------------------|
| 2           | 474                    | 370            | 340              | 27.4         | 5.4      | 85      | 30      | 0.75       | 0.0689          | 0.36     | 0.66         | 7.22 | 7              | 0       | Also known as p24250-3 Lot 1 |
| 3           | 408                    | 300            | 284              | 28.5         | 5.08     | 78.4    | 23.3    | 0.41       | 0.132           | 0.37     | <RL          | 7.16 | 0              | 0       | Also known as p24250-4 Lot 3 |
| 4           | 408                    | 360            | 330              | 27.3         | 4.61     | 89.5    | 28.3    | 0.47       | 0.08            | 0.38     | 0.72         | 7.27 | 2              | 0       | Also known as p24250-5 Lot 9 |

Analyses by Nebraska Health and Human Services Laboratory  
- North Branched Oak Estate Wells

**LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT  
INTER-OFFICE COMMUNICATION**

**TO:** Mike DeKalb

**DATE:** August 30, 2004

**DEPARTMENT:** Planning

**FROM:** Chris Schroeder

**ATTENTION:**

**DEPARTMENT:** Health

**CARBONS TO:** EH File

**SUBJECT:** North Branched Oak

EH Administration

Estates PP #04021  
SP #04047

The Lincoln-Lancaster County Health Department (LLCHD) has reviewed the proposed development with the following noted:

- The developer proposes the use of private wells for potable water. A report addressing expected water quantity and quality must be provided to the LLCHD.
- The developer has adequately addressed wastewater treatment issues in the general notes section of the site plan.
- During the construction process, the land owner(s) will be responsible for controlling off-site dust emissions in accordance with Lincoln-Lancaster County Air Pollution Regulations and Standards Article 2 Section 32. Dust control measures shall include, but not limited to application of water to roads, driveways, parking lots on site, site frontage and any adjacent business or residential frontage. Planting and maintenance of ground cover will also be incorporated as necessary.



**LINCOLN-LANCASTER COUNTY HEALTH DEPARTMENT  
INTER-OFFICE COMMUNICATION**

**TO:** Mike DeKalb

**DATE:** September 7, 2004

**DEPARTMENT:** Planning

**FROM:** Chris Schroeder

**ATTENTION:**

**DEPARTMENT:** Health

**CARBONS TO:** EH File

**SUBJECT:** North Branched Oak

EH Administration

Estates PP #04021

SP #04047

Groundwater Report

Review of the groundwater report for North Branched Oak Estates indicates that water quantity and quality will be major issues to consider relative to the development of this property. The following information is provided as summary.

Well yields in the area range from 15 gallons per minute (gpm) to 3 gpm. The Lincoln-Lancaster County Health Department (LLCHD) considers 5 gpm to be a minimum yield requirement for a domestic water supply. The report indicates the potential for developing wells on the six lots that did not have test wells to be speculative because of the geologic complexity. This information would indicate the need for test wells on each lot. Furthermore, if well depth is increased to acquire adequate yield, it can be expected that water treatment units such as reverse osmosis or distillation may be needed in addition to the water softening units that are in common use throughout the county. This can represent a significant expense for equipment and on-going maintenance.

Lancaster

County

Engineering

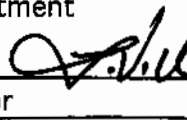
Department

**DON R. THOMAS - COUNTY ENGINEER**

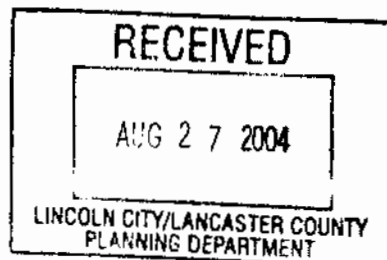
DEPUTY- **LARRY V. WORRELL**  
COUNTY SURVEYOR

**DATE:** August 26, 2004

**TO:** Mike DeKalb  
Planning Department

**FROM:** Larry V. Worrell   
County Surveyor

**SUBJECT:** NORTH BRANCHED OAK ESTATES  
PRELIMINARY PLAT



Upon review, this office would have the following comments:

- 1) General Notes are acceptable except for No. 11.
- 2) Existing farm access locations for Lots 8 & 9 will have to have access permits applied for residential use. Lot 7 will also require an access permit and shall be a minimum of 300 feet south of West Rock Creek Road.
- 3) Easements shall be shown for culvert pipe in the event NW 86<sup>th</sup> Street becomes a public street in the future.
- 4) The HY-8 culvert analysis has a headwater elevation for the 50 year flow over the top of road elevation but shows no overtopping. Also, the tailwater depth is shown as 0.00 which is incorrect.
- 5) The typical cross section of improvement shall be shown.
- 6) Grading shall extend around the temporary turnaround.
- 7) General Note No. 11 shall include relinquishment of access to NW 84<sup>th</sup> Street except for one access each to Lots 7, 8 and 9.

LWW/DP/bml  
Subdiv.wk/North Branched Oak Estates PP Mem.